

Salt marsh management

Like most floodwater mosquitoes, salt marsh mosquitoes lay their eggs on dry or damp marsh sediments. The eggs, which can remain dormant for long periods of time, hatch when flooded either by rain or high tides. To reduce salt marsh and mangrove swamp mosquito production, the managed wetlands are artificially flooded with a shallow layer of water during the periods of major salt marsh mosquito activity (roughly from late April to late August). This management technique reduces the number of suitable egg deposition sites in the marsh, thus greatly diminishing the number of salt marsh mosquitoes.

The district manages about 5000 acres of salt marsh. These wetlands are separated from the river by a series of dikes that allow the water level to be maintained at levels high enough to flood mosquito producing areas. The dikes are penetrated with numerous culverts which are generally left open during the non-management periods to allow free exchange of both water and estuarine organisms between the impounded wetlands and the lagoon. These culverts maintain connectivity between the impounded areas and the river, improving biological productivity of both the wetlands and the Indian River Lagoon. In the periods of major salt marsh mosquito activity, when the wetlands are artificially flooded, water is pumped into the impounded areas from the Indian River using electric pumps, and the culverts are fitted with tide gates of varying designs. The combination of various pumping techniques and tide gate configurations allow the district to maintain optimal water quality inside the impounded wetlands during this period.

Managing mosquito impoundments through the salt marsh mosquito breeding season has greatly reduced the production of mosquitoes in swamps adjacent to the lagoon. This has decreased the costs of both spraying for adults and treating for larvae in areas near the Indian River, which are impacted by salt marsh mosquitoes. On occasions of heavy rain or unusually high tides, when mosquito production can occur in parts of the managed wetlands, impoundments are inspected for larvae. If developing mosquitoes are found, breeding areas are treated with a bacterial material by air to destroy the maturing mosquitoes before they become a problem. The bacteria used for this purpose are specific to mosquito larvae and do not impact other marsh organisms.

Photos and more information on mosquito impoundments.